WHAT IS CLAIMED IS:

1. A manufacturing method for an optical waveguide device, comprising the steps of:

forming an optical waveguide in a substrate having an electro-optic effect;

forming an SiO_2 film on said substrate;

forming Si films on said SiO_2 film, the lower surface of said substrate, and at least a part of the side surface of said substrate to thereby make a conduction between said Si film formed on said SiO_2 film and said Si film formed on the lower surface of said substrate;

applying a photoresist to said Si film formed on said SiO_2 film;

patterning said photoresist so that a portion of said photoresist corresponding to said optical waveguide is left;

forming a groove on said substrate along said optical waveguide by reactive ion etching; and

removing said photoresist and said Si films.

2. The manufacturing method according to claim 1, wherein said substrate comprises a $LiNbO_3$ substrate, and said step of forming said optical waveguide comprises the step of thermally diffusing Ti in said $LiNbO_3$ substrate.

3. The manufacturing method according to claim 1, wherein said step of forming said Si films is performed by sputtering.

4. The manufacturing method according to claim 1, wherein said photoresist comprises a conductive photoresist.

5. A manufacturing method for an optical waveguide device, comprising the steps of:

forming an optical waveguide in a substrate having an electro-optic effect;

forming an SiO_2 film on said substrate;

forming Ti films on said SiO_2 film, the lower surface of said substrate, and at least a part of the side surface of said substrate to thereby make a conduction between said Ti film formed on said SiO_2 film and said Ti film formed on the lower surface of said substrate;

applying a photoresist to said Ti film formed on said SiO_2 film;

patterning said photoresist so that a portion of said photoresist corresponding to said optical waveguide is left;

forming a groove on said substrate along said optical waveguide by reactive ion etching; and

removing said photoresist and said Ti films.

6. An optical waveguide device comprising:

a substrate having an electro-optic effect;

an optical waveguide formed in said substrate;

a signal electrode formed in relation to said optical waveguide;

a grounding electrode formed on said substrate;

a groove formed on said substrate along said optical waveguide;

an SiO_2 buffer layer formed on said substrate except said groove; and

an Si film formed on said SiO_2 buffer layer, the inner surface of said groove, the lower surface of said substrate, and at least a part of the side surface of said substrate.

7. The optical waveguide device according to claim 6, wherein said substrate comprises a $LiNbO_3$ substrate, and said optical waveguide is formed by thermally diffusing Ti in said $LiNbO_3$ substrate.

8. An optical modulator comprising:

a substrate having an electro-optic effect;

an optical waveguide structure having an input waveguide formed in said substrate, an output waveguide formed in said substrate, and first and second waveguides

extending between said input waveguide and said output waveguide, said first and second waveguides being connected to said input and output waveguides, respectively;

a signal electrode formed over said first waveguide;

a first grounding electrode formed over said second waveguide;

a second grounding electrode formed over said substrate at a position opposite to said first grounding electrode with respect to said signal electrode;

a first groove formed on said substrate along said first waveguide;

a second groove formed on said substrate along said second waveguide;

an SiO_2 buffer layer formed on said substrate except said first and second grooves; and

an Si film formed on said SiO_2 buffer layer, the inner surfaces of said first and second grooves, the lower surface of said substrate, and at least a part of the side surface of said substrate.

9. The optical modulator according to claim 8, wherein said substrate comprises a $LiNbO_3$ substrate, and said optical waveguide structure is formed by thermally

diffusing Ti in said $LiNbO_3$ substrate.